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STUDIES OF IN-SHELTER
MANAGEMENT GUIDANCE MATERIALS

Prepared for:

OFFICE OF CIVIL DEFENSE
DEPARTMENT OF THE ARMY
OFFICE OF THE SECRETARY OF THE ARMY
Under
CONTRACT NO. OCD-PS-64-57
OCD WORK UNIT 1542A

AMERICAN INSTITUTES FOR RESEARCH
Pittsburgh, Pennsylvania

September 1966
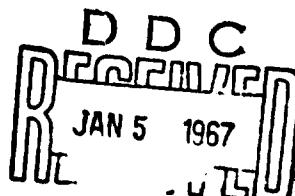
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STUDIES OF IN-SHELTER MANAGEMENT GUIDANCE MATERIALS

(Summary of a Technical Report)

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Prepared by:

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James Unterwagner
Frank F. McIntyre, Jr.

Social Systems Program
Institute for Performance Technology
AMERICAN INSTITUTES FOR RESEARCH
Pittsburgh, Pennsylvania

September 1966

SUMMARY

This report describes two research studies in management guidance for in-shelter use conducted under contract OCD-PS-64-57, Work Unit 1542A.

Abbreviated Guidance for Small Shelters

This section of the report combines two research interests, abbreviated guidance and management support for the non-Federally stocked shelter. The interest in abbreviated guidance stems from analyses of the shortcomings of existing management guidance materials and from observation of guidance use in habitability studies of from 20-40 people for 1-2 days. The prototype version of the Small Shelter Management Guide presented in this report is an attempt to solve four common dilemmas associated with emergency guidance materials. These are:

1. How much information should be presented?

2. What assumptions should be made about the guidance user?

3. How many users should be assumed?

4. How should the guidance items be arranged on the printed page?

The under 50-person shelter represented an ideal setting for the initial studies of abbreviated guidance because of its small size and comparative simplicity.

The Small Shelter Management Guide was based upon the following inputs:

1. The Shelter Manager's Guide, produced by AIR in 1965, under contract to OCD.

2. Various versions of abbreviated guidance used by AIR in its shelter research.

3. Shelter management guidance materials produced by other OCD contractors and by various levels of the civil defense organization.

4. The available published literature on the preparation of emergency use materials.

The primary objective of the prototype guide was to develop the concept, to determine analytically whether the content and the format could be matched.

Format Recommendations for Shelter Management Guidance

Most of the research dealing with guidance materials have focused on the content of shelter management. However, content is not the only important factor. The format in which materials are presented can significantly affect the degree to which the guidance is used and its effectiveness in use. The subject of this section of the report is the arrangement of information on the printed page, so that it will be used most effectively under the physical and psychological conditions that will be obtained in an occupied fallout shelter.

This section is based upon a review of the available literature on the preparation of written guidance materials. It contains a compilation of recommendations relevant to formatting shelter management materials. The recommendations deal with the following factors:

1. Type style.

2. Leading, type size and line width.

3. Spatial arrangement of the page:
   a. margins,
   b. indenting,
   c. area,
   d. space between columns.

4. Use of tabs.

5. Use of tables, graphs, scales.

6. Decals, check lists and labels:
   a. style of print,

b. size of print,

c. contrast,

d. word selection,

e. brevity.

7. Page size and color

8. Format for check lists.

9. Content.

10. Cover.

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ABSTRACT

This report describes two small scale research efforts dealing with the subject of management guidance materials for use in-shelter. The first effort culminated in a prototype abbreviated guidance aid designed for the small (under 50-person) shelter. This version tried to avoid some of the shortcomings of previous management guidance documents, such as large size or inflexibility of use. The second section of this report is based on a review of the relatively meager literature on the preparation of written materials for emergency use. It discusses the major "graphic art" factors that should be considered in developing emergency guidance materials and provides recommendations for guidance preparation where appropriate.

1

INTRODUCTION

Research on the subject of in-shelter management guidance materials was carried out in three separate efforts under contract OCD-PS-64-57.

The major effort was an experimental study of the effect of guidance materials, in combination with other forms of preparation, upon performance in a shelter management test. The results of this study are reported in another document in the series of reports produced under contract OCD-PS-64-57.[1]

The remaining two efforts comprise the subject matter of this report. The first one, "Abbreviated Guidance for the Small (under 50 persons) Shelter," represents a combination of two research interests, abbreviated guidance, and management support for the non-Federally stocked shelter. The interest in abbreviated guidance[2] stems from analyses of the shortcomings of existing management guidance materials, and from observation of guidance use in habitability studies. The under-50-person shelter represents an ideal setting for initial studies of abbreviated guidance because of its small size and comparative simplicity.

In addition, the under-50-person shelter represents a fairly sizeable national resource from a fallout protection point of view.

"OCD estimates that there are ... more than 1,000,000 smaller structures, exclusive of single family homes, with a potential for providing fallout protection for an estimated 13,000,000 people."[3]

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[1] Smith, R.W., Bond, E., Jeffreys, F.B., & Collins, R.A. _An experimental study of "Integrated guidance for shelter management."_ Pittsburgh: American Institutes for Research, September 1966.

[2] Abbreviated guidance is an ordered listing of major management duties, devoid of detailed explanation and most supporting information that has been abstracted from a more comprehensive guidance document.

[3] U.S. Department of Defense. _Civil defense 1965._ Washington: Author, 1965. p. 15.

It remains for future research to determine whether and how abbreviated guidance can be utilized in the large, complex public shelter.

The second section of this report is titled, "Format Recommendations for Shelter Management Guidance." It is a review of major factors, other than content, that should be taken into account in designing written materials for emergency use. The paucity of research-based recommendations indicates that the subject of emergency guidance preparation has received very little systematic attention, at least in the published and available literature.

ABBREVIATED GUIDANCE FOR SMALL SHELTERS

THE PROBLEM

Very little is known about how people use guidance materials under emergency conditions. The use of management aids has been examined in habitability studies, which has led to valuable recommendations concerning their preparation. In the main, however, habitability research has not simulated the physiological, psychological and social stresses that may dramatically effect the manner in which emergency guidance materials are perceived and applied. It is our intention to rigorously examine the use of guidance in experimental high-stress situations in research currently being initiated. The recommendations that culminated in the Small Shelter Management Guide presented in this report, are largely based on pre-experimental observation of the use of emergency handbooks in 20- and 40-person shelter stays of 1 to 2 days duration. The Small Shelter Management Guide reflects an initial attempt to solve four common dilemmas associated with emergency guidance materials. These are:

1. How much information should be presented?

2. What assumptions should be made about the capabilities of the guidance user?

3. How many guidance users should be assumed?

4. How should the guidance items be arranged on the printed page?

The more information that is crammed into the management guide, the more unwieldy the guide will be to use. It is not too difficult to imagine situations in which, by the time all available information on a given subject has been gathered and evaluated, it will be too late to implement an optimal solution. On the other hand, if one searches through a document that purports to carry management guidance and finds only brief generalizations and exhortations, valuable time will have been lost that could have been applied to thinking through a solution. The objective of the current research effort

was to distill from the comprehensive 160-page Shelter Manager's Guide[4]
the essential information and action guidelines, that would apply to
the less than 50-person shelter without Federally provided supplies.
The distillate filled the equivalent of eight pages.

For whom is shelter management guidance intended? The afore-
mentioned Shelter Manager's Guide would definitely be more useful to the
trained manager or one who at least had time to familiarize himself
with its content and organization. The goal of intelligibility to the
unprepared layman imposes very severe limitations on the preparation
of emergency guidelines for shelter use. The Small Shelter Management
Guide attempts to dispense with some of the jargon that characterized
previous guidance documents. One can anecdotally report that in the AIR
shelter case studies, in which other forms of simplified guidance was
available, those who used it had no difficulty in understanding the words
but this can hardly be called an evaluation of the concept.

A problem that has plagued guidance writers is that of getting the
information to the ultimate user(s). If the information is contained
in a single bound volume, it is difficult for more than one person at
a time to have access to the materials. The common type of solution,
using tear sheets, or separate cards or envelopes that are distributed to
users, apparently creates problems in that materials disappear or turn up
in the wrong hands, or pose coordination difficulties. This has been observed
in several types of habitability studies. The solution attempted in the
Small Shelter Management Guide is a fold-out, parts of which can be read
simultaneously by several people with control of the materials retained by
the manager.

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[4]Brandegee, Ada S., & Bend, E. Integrated guidance for shelter management:
Shelter manager's guide. Volume III. Pittsburgh: American Institutes
for Research, June 1965.

Perhaps the most serious disadvantage of a bound guidance volume is that it is predicated upon an implied scenario of shelter events. The author makes a decision as to the order in which events are likely to unfold or ought to unfold in the shelter. If actual shelter situations do not occur in the page-numbered predicted sequence, the guidance user can be hard-put to make his way through the document.[5] The Small Shelter Management Guide retains its implicit scenario of events. However, it makes available at one time information about a number of different shelter activities so that the user can more readily pick and choose guidelines that conform to the sequence of actual shelter happenings.[6]

The reader is reminded that this approach to abbreviated guidance for small shelters has not been tested, or even observed in use in a shelter. Even though it may overcome some of the disadvantages of other types of in-shelter guidance, it may create its own set of use-problems. Claims for its effectiveness, therefore, await the results of further study.

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[5] For example, in a paper and pencil test of a preliminary version of the full Shelter Manager's Guide, it was determined that there was no significant difference in the average length of time it took to search for information in the Manager's Guide compared to an AIR training text in shelter management that was organized on non-chronological lines. An in-shelter document for emergency use must make available its content more rapidly than a textbook, or its usefulness is seriously limited.

[6] At present, this capability comes at a cost of making some of the early entry phase guidance items difficult to retrieve after a period of time has elapsed. Use-tests with the format should reveal whether this aspect needs to be "human engineered."

THE APPROACH

The <u>Small Shelter Management Guide</u> was based on the following inputs:

1. The <u>Shelter Manager's Guide</u>, the comprehensive in-shelter volume produced by AIR under contract OCD-PS-64-57, Work Unit 1542A.

2. Various versions of abbreviated guidance used in the AIR shelter habitability studies.

3. Shelter management guidance materials prepared by other contractors and by various echelons of the civil defense organization.[7]

4. The available published literature on the preparation of emergency use materials.

The model of the <u>Small Shelter Guide</u> that was developed is a prototype one. The primary objective of this year's study was to develop the concept, that is, to determine analytically whether content and format could be matched. Both the content and the format will undoubtedly be refined through use in the experimental studies being initiated under an extension to OCD-PS-64-57.

A key issue that remains to be resolved is the generalizability of the present approach to abbreviated guidance. Although accurate, to-the-point, well presented guidance will be of value in even the smallest shelter, the need for management aids is clearly greater for the large shelter of complex configuration. Continued developments of the large shelter contingency game or the simulated large shelter training exercise

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[7] In the former category, one may cite the University of Georgia Management Materials produced under contract OCD-PS-65-45. The latter category is exemplified by a shelter manager's checklist put out by OCD Region 4.

may provide the vehicles through which the effectiveness of abbreviated guidance could at least partially be tested in a large shelter context.

SMALL SHELTER MANAGEMENT GUIDE

This version of the Small Shelter Management Guide has been developed
as a prototype to evaluate the underlying concept of abbreviated guidance,
as well as the content of management guidelines for the small (under 50-
person) shelter. This preliminary version has not been constructed using
the "graphic art" principles for effective guidance preparation that are
outlined in the next section of the report.

SMALL SHELTER MANAGEMENT GUIDE

For <u>peacetime shelter planning</u> use, turn Guide over to Panel (16).

INSTRUCTIONS FOR EMERGENCY USE:

Certain immediate actions must be taken for everybody's safety and welfare.

If a trained manager is not present, an adult should read and follow the instructions in this Guide until the arrival of the trained manager.

IF MANY PEOPLE ARE NOW IN THE SHELTER OR ARE ENTERING THE SHELTER, OPEN THIS GUIDE TO PANEL (2) IMMEDIATELY. ➡

IF NOT MORE THAN A FEW PEOPLE ARE IN THE SHELTER, FOLLOW THE GUIDELINES BELOW.

⬇

A. PREPARE SHELTER FOR PEOPLE ENTERING

1. Open all doors to the shelter area. Also open doors of building to be used in filling the shelter.

2. Turn on all lights needed to fill shelter safely.

3. Tell first persons entering to help clear entrances and remove barriers to filling shelter, if there are any.

4. Check the location of vital shelter supplies. If time permits, have someone count the available supplies.

5. If people still have not arrived, open Guide to Panels (2) & (3) and review your next steps.

AS SOON AS PEOPLE ARRIVE OPEN GUIDE TO PANEL (2) ➡

B. FILL THE SHELTER AND ASSUME COMMAND

1. Choose one adult male to stand at every entrance to the shelter, and direct incoming people away from the entrances.

   See to it that people fill areas of the shelter that are furthest away from entrances.

   Keep pets and bulky items out of the shelter, at least temporarily.

2. Choose an adult to count the number of people in the shelter and to count (or estimate) the number of people waiting to get in.

   Tell this person to inform you when the planned capacity has been reached.

   > CAPACITY OF THIS SHELTER IS _____ PERSONS

3. Choose an adult male to guard the supplies until a supply team is chosen.

4. As the temporary leader of this shelter, get the attention of the group and introduce yourself. Tell the group:

   a. That in the absence of a trained manager you are starting certain immediate actions that are necessary for survival,

   b. That the shelter has supplies and equipment, as well as instructions for performing required tasks. These will be explained to the group in a little while.

5. If capacity of the shelter has been reached, and there are still people outside, a decision will have to be made whether to:

   a. Direct the extra people to other shelters, or to

   b. Allow the people into the building, but temporarily keep them out of the shelter area, or to

   c. Allow people into the shelter area.

   In reaching a decision take into account the following points:

   a. Number of people outside,

   b. Whether or not they are related to people inside,

   c. Available supplies in the shelter,

   d. Existence of nearby fallout shelters,

   e. Existence of other parts of this building that would give some protection against radiation.

6. If there is a radio available, have it tuned to an Emergency Broadcast System (EBS) station for emergency information. Assign someone to listen for EBS broadcasts.

In the event of
EMERGENCIES, op

C. SELECT TEMPORARY ASSISTANTS

1. To help you start organizing the shelter, it is important that you select assistants. If you know people in the shelter who have experience in the jobs listed below select them for now. If not, ask for a volunteer with each of the following sets of skills:

   a. To help with RADIOLOGICAL tasks, choose:
      trained radiological monitor, engineer, scientist, science teacher, technician, repairman, etc.

   b. To help with SAFETY tasks, choose:
      engineer, police or fireman, industrial safety worker, etc.

   c. To help with MEDICAL AND SANITATION tasks, choose:
      physician, dentist, registered nurse, pharmacist, practical nurse, trained first aider, etc.

   d. To help with FOOD AND WATER tasks, choose:
      dietician, home economist, person with food business experience, housewife, etc.

   e. To help with COMMUNICATION AND ADMINISTRATION tasks, choose:
      office manager, stenographer, etc.

2. Tell the people whom you have selected:

   a. To standby for further instructions,

   b. That their assignment is only temporary. Permanent work groups will be selected later.

D. CHECK SUPPLIES AND BRING IN ADDITIONAL SUPPLIES AS NEEDED

1. Have each assistant check the amount and condition of the shelter supplies that he is responsible for. Refer to STOCKED IN SHELTER column, in the supply list, on Panel ④.

2. Select volunteers who are familiar with the building to bring into the shelter the equipment and supplies listed in the AVAILABLE IN BUILDING column in supply list on Panel ④.

E. BEGIN SHELTER ORGANIZATION

1. While the supplies are being checked, divide the shelter population into living groups of 7-12 persons each. Keep families and friends together.

2. Assign each group to its own location in the shelter.

3. Ask each group to select a leader who will speak for that group.

CONTINUE TO REASSURE THE POPULATION OF THE SURVIVAL CAPABILITY OF THE SHELTER AND STRESS THE NEED FOR COOPERATION.

For convenience, hang or tape this section of
the Guide to a wall, or lay it flat on a desk.

44.

IMMEDIATE MANAG

F. SHELTER SUPPLY CHART

TYPE OF SUPPLY	STOCKED IN SHELTER (supply item, amount, location)	AVAILABLE IN OR AROUND BUILDING (supply item, amount, location)
Water and other liquids		
Food		
Medical supplies		
Fire-fighting equipment		
Sanitation supplies		
Ventilation equipment		
Lighting equipment		
Auxiliary power		
Communication equipment		
Tools		
Sleeping facilities		
Training, recreation		
Other: _____		

G. START SHELTER SURVIVAL TASKS

1. Have everyone in the shelter list on a piece of paper his name, age, occupation, and special skills that might be useful. Let the group leaders supervise this job. Use the information for reference in choosing work teams.

2. While this is going on call your assistants together for a meeting about their duties. See to it that your assistants become familiar with those instructions, listed below, that pertain to their assignments.

H. INSTRUCTIONS FOR INITIAL SURVIVAL TASKS

1. RADIOLOGICAL PROTECTION TASKS

    a. Read any available booklets, brochures on radiological protection.

    b. If there is no information on radiation available in the shelter, refer to the following paragraph for an introduction.

Protection against radiation is the reason why everyone is in the fallout shelter. "Fallout" consists of particles of dirt, debris, etc., that have become radioactive as a result of a nuclear explosion, and decend rapidly back to the earth.

Fallout particles look like sand or dirt, and they accumulate on surfaces like sand or dirt does.

Fallout is dangerous only because of the radiation that it emits.

The greatest danger to man from fallout comes from gamma rays, which are very much like x-rays. They can pass through matter, and damage or destroy living cells.

Protection from fallout radiation is provided in two ways:

a. By placing dense materials (earth, concrete, steel) between the radio-active material and the persons being protected, and

b. By keeping people as great a distance away from the sources of radiation (keep people away from doors, windows, other openings).

If fallout particles are detected on persons or supplies, shake or brush particles off, and sweep to exits. Remember: radiation IS NOT contagious. Once the radioactive particles have been removed, the exposure to radiation will be removed.

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    c. Select a team of the most qualified people to do radiological protection jobs.

    d. If radiological equipment is available, begin monitoring the radiation levels on a regular schedule at different points in the shelter, especially near doors and other openings.

    e. If there is no equipment and no radiological information has been given over the radio, the following may help to determine whether fallout has arrived:

        1. In daytime, place white plate or cloth in exposed area outside shelter. Fallout should be clearly visible on it.

        2. At night, a flashlight beam will illuminate fallout as it descends.

In the event of FIRE or other shelter EMERGENCIES, open to Panels (14) and (15).

(6)

GEMENT ACTIONS

f. Where possible, increase protection against radiation by having people cover or baffle shelter openings with dense materials such as sandbags, concrete blocks, heavy wooden planks, cartons of supplies, etc.

2. SAFETY TASKS

a. Choose people for the safety team.

b. Begin a fire and safety watch. Inspect the shelter for fire hazards.

c. Set up temporary rules and procedures for smoking.

d. Instruct people to remain as quiet and inactive as possible in order to reduce rise in temperature, when outside temperature is high.

e. Check the condition of all shelter equipment, especially power, lighting, and ventilation.

3. MEDICAL AND SANITATION TASKS

a. If there are no trained medical personnel in shelter, let the most qualified person read whatever medical guide books can be found.

b. Select a team of people with most related skills to take care of first aid duties.

c. Set aside a part of the shelter as a medical care area. Keep medical supplies there, under constant supervision.

d. Keep a written record of each patient's problem and all the medication given him.

> If there is a shortage of medical supplies, give them to patients whose chances for survival would be most greatly increased by the medical treatment, in the judgment of the most medically qualified person(s) present.

e. Select persons to perform sanitation tasks.

f. If normal toilet facilities are available, put them in use, after checking whether the drinking water supply is adequate.

g. Set up chemical toilets if available and if normal toilet facilities are not working. If there are no chemical toilets, use drums, buckets, other sturdy containers as a last resort. Set up sanitation facilities in a part of the shelter that provides privacy.

4. FOOD AND WATER TASKS

a. Choose people for the food and water team.

b. Locate all possible sources of drinking water in the building. This includes the building water system (hot water tanks, water-closet flush tanks, etc.)

c. Locate any available containers for water; fill with water and bring into the shelter.

> If temperature and humidity are not too high, healthy adults can survive an extended shelter stay with a minimum of one quart of water a day. Healthy adults can also survive without any water for 4-5 days, and without food for considerably longer.

5. COMMUNICATIONS AND ADMINISTRATION TASKS

a. Select people to do communication and administration jobs.

b. Have radio monitored continuously for EBS broadcasts. Assign person to monitor telephones or other available communications devices. '

c. Assign someone to begin keeping a record of important shelter events.

I. ADDITIONAL IMMEDIATE MANAGEMENT DUTIES

1. After the initial tasks are underway, meet with the group leaders whom the people in the shelter selected. Review shelter conditions with them. Determine whether there are any people in shelter with serious physical or emotional problems.

2. At the first convenient time, hold a meeting with the entire shelter population.

   a. Review the survival steps that have already been put into effect, and describe the resources available in the shelter.

   b. Briefly describe what the shelter stay is likely to be. (Scan Panels (8)(13) for information about future shelter operations and activities).

   c. Let everyone in the shelter be introduced to the entire group.

   d. Permit the group to raise _important_ shelter issues that need rapid solution.

   e. Inform the group that a permanent shelter organization will soon be established.

   f. Ask people to volunteer their personal possessions that are needed for the survival of the group. Examples of useful items include: knives, radios, flashlights, nail clips, files, pens & pencils, lighters, matches, books, food.

3. If there are signs that the group is hungry or thirsty or after about 4 hours in shelter, have food and water team serve first ration. Estimate the ration conservatively on the basis of a two week stay in the shelter.

4. Have Communication & Administration team begin census of shelter population. Useful information from each person includes: name, address, age, sex, social security number, medical problems, occupation, other relevant skills and experiences, education, religious preference, members of immediate family (in the shelter or elsewhere).

5. If shelter entry took place at night, have group leaders begin to plan sleeping arrangements. For a single room shelter, in which everyone will sleep on the floor, use an arrangement where family groups are placed in the middle of the room and single women at one end and single men at the other end.

   Plan a night watch, at least one adult on duty at all times on a one-hour shift.

For convenience, hang or tape this section of
the Guide on a wall or lay flat on a table.

ONGOING MANAGE

In planning shelter operations, estimate a shelter stay of two weeks unless
other information is available.

J. SET UP A PERMANENT SHELTER ORGANIZATION

1. A sample organization chart for a 40-person shelter can be found on Panel ⑫.
   Modify the organization to fit the needs of this shelter. Apply these
   general rules:

   a. Review shelter census information before selecting permanent work teams.
      Permit people who have held temporary jobs, to continue in their
      assignments, if they have done well.

   b. See to it that every able-bodied person, including older children, has
      some job to do in the shelter. Activity is an important morale booster.

   c. Rotate assignments of those with unpleasant jobs, or if people lose
      interest in their assignments.

   d. Delegate responsibility to others: the shelter manager should not try to
      do everything by himself.

2. Assign each person in the shelter to his permanent living group.

3. Set up a schedule of shelter activities. See Panel ⑫ for example.

4. See to it that the operations and activities described below are carried out.
   Have the appropriate people become familiar with the information about their
   responsibilities presented in Panels ⑧ to ⑪.

K. CONTINUE SHELTER OPERATIONS AND ACTIVITIES

1. RADIOLOGICAL PROTECTION

   The reason that shelterees can leave the protection of the shelter after a
   certain period of time is that radioactive particles lose their radioactivity
   at a given rate of time (known as decay rate). The decay rate may be estimated
   by a rough approximation known as the "7/10" rule. Provided that fallout is
   completely down, the total intensity from fallout radiation will decrease ten
   times for every sevenfold increase in time after a nuclear blast. For example,
   if all fallout has accumulated, and if the radiation dose rate had been 300
   Roentgens per hour (300 R/hr) one hour after blast, it would decrease to
   about 30 R/hr seven hours after the explosion. In approximately two days
   after the blast (7 x 7 hours), the rate would be about 3 R/hr; and in
   approximately two weeks (49 x 7 hours), the rate would be reduced to about
   .3 R/hr.

   a. Continue the activities begun earlier.

   b. Keep a record of radiation readings. See Radiation Log, Panel ⑬.

   c. If inspection of persons or of food and water reveals presence of fallout
      particles, follow simple decontamination procedures:

      1. Brush or shake particles from persons entering shelter after fallout
         has begun to descend.

      2. Treat fallout on food the same way as any grit or sand. Remove
         as many particles as possible before eating.

3. Filter water through paper towels, or fine cloth,
or allow water to stand until fallout settles to bottom.

4. Do not deny people food or water only because it may be contaminated.

5. Remove fallout particles from the shelter the most direct way possible: sweeping, brushing, hosing, etc.

d. If radiological monitoring equipment is available, apply the following guidelines:

1. For first 24-48 hours, try to locate people in areas with dose rates below 2 Roentgens per hour, even if crowding is necessary.

2. Rotate shelterees in areas of highest and lowest protection if a difference of ten Roentgens exists between highest and lowest exposure doses.

3. If the radiation rate exceeds ten Roentgens per hour or 75 Roentgens in 48 hours, consider taking action to locate better protection for the population.

e. If there is no other information about when to leave shelter, use following guidelines as a last resort:

1. If intensity (Roentgens per hour) has fallen to less than 0.5:
No special precautions necessary, except to sleep in the shelter.

2. If intensity (Roentgens per hour) has fallen to 0.5 to 2:
Outdoor activity (up to a few hours per day) tolerable for essential purposes.

3. If intensity (Roentgens per hour) has fallen to 2 to 10:
Less than an hour per day outdoor activity tolerable for the most essential purposes. Rotate outdoor tasks to minimize total doses.

4. If intensity (Roentgens per hour) has fallen to 10 to 100:
Time outside of shelter limited to a few minutes and to those activities that cannot be postponed for at least one more day.

5. If intensity (Roentgens per hour) has fallen to greater than 100:
Outdoor activity of more than a few minutes may result in sickness or death.

> In using the above information, it is important to take into account the age of the fallout. If, for example, an external reading of 2 R/hr was obtained after one day in the shelter, it would mean that the total radiation exposure of the shelterees would be much less than if a reading of 2 R/hr was initially obtained only after a week in the shelter. In the former instance, the rules for permissible outside activities can be relaxed somewhat; in the later case, they should be made more stringent.

2. SAFETY (including security)

a. Continue the activities begun earlier.

b. Set up list of safety rules and procedures and conduct practice emergency drills.

c. Where needed, set up a list of shelter rules governing behavior in-shelter.

d. If high temperature is becoming a shelter problem:

1. Reduce physical activity of occupants,

2. Limit the use of heat-producing appliances.

:MENT ACTIVITIES

    3. Open windows, doors, etc., where feasible.

    4. Rotate living groups if one part of the shelter is much cooler than others.

  e. If atmosphere imbalance (such as high carbon dioxide or monoxide production) becomes a problem:

    1. Limit physical activities.

    2. Increase supply of air in shelter.

    3. Prohibit open flames and control smoking.

> Symptoms of <u>high temperature extremes</u> are: nausea, dizziness, pain, increase in need for water. Symptoms of <u>increased carbon dioxide</u> levels include: deeper and faster breathing, nausea, finally--inability to coordinate and unconsciousness. <u>Carbon monoxide</u> symptoms are: flushed skin, dizziness, lack of strength and balance, fainting and mental confusion, leading to unconsciousness and death.

  f. Check emergency lighting equipment. If inadequate lighting is anticipated, prepare procedures for operating the shelter under minimum illumination conditions. Use open flames for lighting, only as a last resort.

3. **MEDICAL CARE**

  a. Continue activities started earlier.

  b. Provide symptomatic care for persons suffering from radiation sickness.

    1. Radiation sickness is not contagious.

    2. Diagnosis will be difficult because initial symptoms are similar to many common illnesses.

    3. Some of the symptoms which can be expected for various ranges of radiation exposure are:

a) 0 to 200 Roentgens	No obvious effects for 50 percent of population. Mild nausea and vomiting lasting one to two days for those who received 150-200 R. Once stomach is emptied, symptoms should disappear if the victim does not eat for awhile.
b) 200 to 1,000 Roentgens	Initial nausea and vomiting for day or two. After a latent period lasting from several days to a few weeks, secondary effects appear: malaise, fatigue, fever, diarrhea, bleeding, etc. Generally, the earlier the onset of symptoms, the higher the exposure has been. For those who survive, recovery will be lengthy.
c) 1,000 to 5,000 Roentgens	Rapid onset of symptoms. Severe diarrhea and vomiting and death within a few weeks.
d) Over 5,000 Roentgens	Death within hours.

  c. Hold sick call daily on a scheduled basis.

  d. If needed, set up a sick bay in the shelter.

  e. The shelter may contain one or more people who have severe emotional problems, or who are addicted to drugs or to alcohol. In dealing with these people, try to remember that they are in need of professional help. To the extent possible, treat such individuals as victims of illness rather than as persons who willfully violate shelter rules.

4. **SANITATION**

   a. Continue the activities previously started.

   b. Set up procedures for use of sanitation facilities.

   c. Maintain the highest possible sanitary standards to prevent the spread of illness.

   d. If water supply is ample, encourage limited personal hygiene activities (such as sponge bathing, especially for women and children).

5. **FOOD AND WATER**

   a. Figure out the daily food and water ration, based on a 2 week shelter stay.

   b. If feasible, serve 5-6 smaller food/water portions during the day rather than 3 larger ones.

   c. Set up procedures for distributing food and water equitably and without wastage.

6. **SLEEP**

   a. If not previously begun, set up sleeping arrangements.

   b. Establish a night watch; select from adults at least one person to be on watch at all times (not more than one hour per person).

   c. Expect widespread sleeping difficulties first few nights in the shelter.

   d. Include daytime rest periods, as needed for adults as well as children.

7. **COMMUNICATION AND ADMINISTRATION**

   a. Continue activities started earlier.

   b. See to it that records of shelter events are kept using the types of forms presented in Panel (13).

8. **TRAINING AND ORIENTATION**

   a. See to it that the shelter is kept informed of all important matters. This includes: rules for shelter living, schedule of activities, information about shelter status, news from the outside world, etc.

   b. Regularly schedule a daily briefing session for the entire shelter, even though there may be no major news to report.

   c. Establish procedures by which the shelter population can inform management of "gripes" and problems.

   d. After the shelter is operating smoothly, have training team begin survival training courses for the entire shelter. First aid, radiological protection in the post-attack environment are two useful subjects.

9. **RECREATION AND RELIGIOUS AFFAIRS**

   a. Determine the types of recreational and religious activities that would be fitting in terms of the needs and wishes of the shelter population.

   b. Set up program of recreational activities, and appropriate religious services if persons indicate readiness to take part in them. Keep these programs voluntary.

10. **CHILD CARE**

    a. Appoint responsible adult to prepare and supervise special activities for children, including recreation, education, rest.

SAMPLE CHARTS AND FORMS

SAMPLE ORGANIZATION CHART FOR 40-PERSON SHELTER

```
                    ┌─────────┐
                    │ Shelter │
                    │ Manager │
                    └────┬────┘
                    ┌────┴────┐
                    │ Deputy  │
                    │ Manager │
                    └────┬────┘
   ┌──────────┬────────┬─────────┼───────────┬──────────────┬───────────────┐
┌──┴────────┐┌─┴────┐┌──┴──────┐┌─┴────────┐┌──┴──────────┐┌──┴────────────┐
│Radiological││Safety││Medical &││Food & Water││Communication &││Training &     │
│   Team    ││ Team ││Sanitation││  Team    ││Administration ││Social Services│
│           ││      ││  Team   ││          ││    Team      ││    Team       │
└───────────┘└──────┘└────┬────┘└──────────┘└─────────────┘└───────────────┘
               ┌──────┬────┴────┬─────────┐
          ┌────┴───┐┌──┴────┐┌──┴────┐┌───┴───┐
          │Group 1 ││Group 2││Group 3││Group 4│
          └────────┘└───────┘└───────┘└───────┘
```
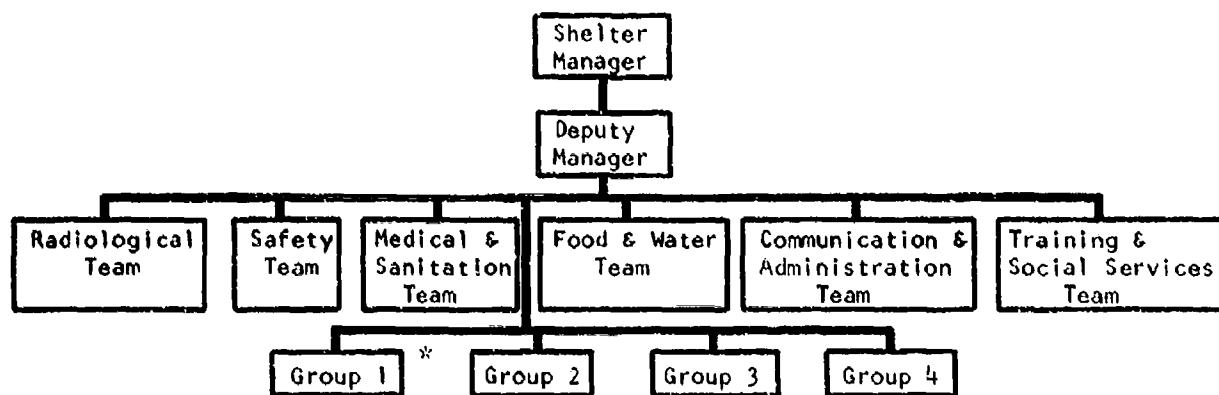
*Each group has approximately 10 persons.

SAMPLE SCHEDULE OF SHELTER ACTIVITIES

0700 (7:00 am) Reveille	1430 Emergency drills
0730 Receive breakfast rations	1500 Water and biscuit break
0800 Eat breakfast	1530 Recreational activities
0830 Clean-up	1600 Recreational activities
0900 Sick call	1630 Free time for quiet activities/naps
0930 Training session or group meeting or continuation of sick call or recreation	1700 Receive dinner rations
	1730 Eat dinner
1000 Water and biscuit break	1800 Clean-up
1030 Training session for adults and older children	1830 Daily briefing
	1900 Training session
1100 Training session for adults and older children	1930 Planned recreational activities
	2000 Planned recreational activities
1130 Free time for quiet activities/naps	2030 Free time for quiet activities
1200 Receive lunch rations	2100 Free time for quiet activities
1230 Eat lunch	2130 Water and biscuit break
1300 (1:00 pm) Clean-up	2200 Free time for quiet activities
1330 Information and training session	2230 Prepare for sleep
1400 Information and training session	2300 Lights out

SHELTER LOG

ENTRY NO.	DATE/TIME	TYPE OF EVENT	DESCRIPTION OF EVENT

COMMUNICATIONS LOG   (One for incoming; one for outgoing messages)

ENTRY NO.	DATE/TIME	TYPE	SENDER	RECIPIENT	CONTENT

RADIATION MONITORING LOG

	DATE:						
	TIME:						
Shelter Areas	Dose Rate	Accum.* Dose	Dose Rate	Accum. Dose	Dose Rate	Accum. Dose	Remarks

*Accumulated Dose

SUPPLY STATUS SUMMARY

SUPPLY ITEM	INITIAL INVENTORY	AVAILABLE AS OF						
	Date:	Date:						
	Time:	Time:						

SHELTER EMERGENCIES

IN THE EVENT OF FIRE

1. Immediately check the seriousness of the fire and its effects.

   a. How many fires are there?

   b. What kind of fire is it--electrical, grease, paper?

   c. Can it be controlled using available equipment?

2. See to it that fire team uses correct equipment/materials for fighting fire.

   a. If oil, grease or gas, use sand, dirt or smother flames with rug, drapes, or heavy clothing. Turn off gas or oil supply if leakage is on fire.

   b. If wood or paper, use unpotable water first.

   c. If electrical fire, use sand, dirt or shut off electricity and use water. Caution: sand or dirt may ruin electric motors.

   d. Caution: Do not use carbon tetra-chloride or other vaporizing liquid extinguishers in small rooms. They release toxic vapors.

3. Direct extinguishing agents at base of fire. Remove all materials which can catch fire away from fire center.

4. If ventilation system is operating, shut it down unless fire is extremely smoky. Caution: use of carbon dioxide may dangerously dilute the oxygen in unventilated areas.

5. Keep shelterees away from fire and fire fighters.

IN THE EVENT OF WATER SHORTAGE

1. If water supply inventory shows insufficient water at present rations for needed length of shelter stay:

   a. Reduce rations immediately.

   b. Reduce physical activities and try to reduce shelter temperature.

   c. Reassure shelterees that they can live without water for several days.

   d. Send out water team as soon as possible.

IN THE EVENT SHELTER IS DAMAGED

1. If damage from nuclear blast or other causes has occurred, determine the extent and seriousness of damage.

2. Decide on whether repairs can be made or not.

   a. Can fallout protection be restored? Are shielding materials available?

   b. What is present fallout condition?

   c. How much radiation will be received before repairs are completed?

   d. Is another shelter close enough to provide a safer alternative than a, b, or c?

3. Assign persons to repair damage to shelter particularly in areas where fallout can enter.

4. Assign persons to unblock shelter exits.

5. If shelter appears to be uninhabitable, consider feasibility of evacuation.

IN THE EVENT OF DEATH(S)

1. Determine that the person is dead. Check symptoms:

   a. Absence of heart beat, pulse, and breathing.

   b. Mirror placed in front of mouth or nose shows no film.

   c. Cornea of eye loses transparency and appears milky.

   d. Body temperature has dropped.

   e. Rigor mortis--stiffening of muscles and rigidity of body appears.

   Assume person is dead but do not pronounce person dead until 24 hours after examination and person's condition remains same.

2. If person is dead, collect all personal effects and give them to family if they are in shelter, or tag him and store in area away from general shelter population.

3. Record all vital information. Indicate cause of death, if possible.

4. Remove body from shelter and bury as soon as possible.

IN THE EVENT
OF FOOD OR OTHER SHORTAGES

1. If food inventory shows a major food shortage:

    a. Reduce rations.

    b. Reduce physical activities of shelterees.

    c. Reassure shelterees that they can survive without food for a lengthy period of time.

    d. Send out supply team for food as soon as possible, after more vitally needed supplies have been obtained.

2. If shortages of medical supplies or other vital supplies or equipment occur:

    a. Evaluate the need for replacing these supplies against the risk of exposure to radiation.

    b. Ration use of supplies if possible.

    c. Be guided by emergency mission instructions.

IN THE EVENT
SHELTER EVACUATION IS REQUIRED

1. Evacuation before radiation levels are very low should be done as last resort, only if the alternative is death for all or large part of the shelter population.

2. Try to delay evacuation 24 to 48 hours in order for radiation levels to lower.

3. Set up procedures for evacuation.

    a. Unblock exits.

    b. If possible, contact local control center for assistance in locating new shelter.

    c. "Lookout" team should search area, if there is time, to find closest and safest shelter.

    d. Tell shelterees to carry as many supplies as possible.

    e. Tell shelterees to cover themselves with blankets or newspapers as well as to be fully clothed.

    f. Tell shelterees to move as quickly as possible and to stay together.

IN THE EVENT EMERGENCY
MISSION IS REQUIRED

1. Determine the priority for each mission, if there is a need for more than one emergency trip outside.

2. Consider specific factors for each mission.

    a. How long can people survive without or with reduced use of these supplies?

    b. Where and how far away is the source of additional supplies?

    c. How many trips will it take to get an adequate supply?

    d. How much exposure has mission team received?

    e. What are radiation levels outside?

3. Set up procedures for mission.

    a. Select volunteers for the mission.

    b. Review actions to be taken.

    c. Dosimeters, if available, should be worn.

    d. Instructions given as to how long people can be gone and how much radiation they can be exposed to.

    e. Send member of radiological team with emergency mission team.

PLANNING GUIDELINES FOR THE SMALL SHELTER (16)

The Federal government is presently not providing supplies for fallout shelters with a capacity of less than 50 people. Therefore, supplies for this shelter will have to be procured in some other way.

The first step in shelter planning is to collect as much information as possible. Start with guidance materials available from the civil defense director. The local college may be helpful with technical matters. If possible, enroll for a civil defense course in shelter management.

ESSENTIAL STEPS IN PLANNING A FALLOUT SHELTER

A. RADIOLOGICAL PROTECTION

1. Have expert assess protection capability of the shelter.
2. Place radiation monitoring equipment plus instructions in shelter.
3. If possible, provide methods for increasing radiation protection capability at time of occupancy.
4. Have someone take civil defense radiological monitoring course.

B. VENTILATION

1. Have ventilation capability of shelter assessed. Determine shelter capacity.
2. If using ventilation equipment, provide emergency source of power.

C. FOOD & WATER

1. Provide adequate water supply in form of stored bottles, cans or through use of building water system. Check minimum water requirements for your area.
2. Provide water purification capability.
3. Stock supply of foods with long "shelf life." Stock a variety of foods; keep feeding plans simple.

D. MEDICAL SUPPLIES

1. Stock medical supplies and handbooks that will be useful in shelter (e.g., first aid).
2. Have someone who is likely to be in the shelter take a first aid training course.

E. LIGHTING

1. If the building has no emergency lighting system, provide flashlights or battery-powered lamps for shelter use.

F. SANITATION

1. Provide human waste facilities (e.g., chemical toilets) in case normal facilities are inoperable.
2. Provide facilities for disposal of other waste materials. If possible, add personal hygiene supplies (e.g., chemically treated towelettes).

G. SAFETY

1. Stock fire-fighting equipment in shelter or make plans for bringing equipment in.
2. Keep shelter free of flammable materials.
3. Stock instructions with all items of shelter equipment and if possible, commonly needed spare parts.

H. COMMUNICATION

1. AM battery-powered radio is minimal need. Additional equipment is useful.

I. SLEEP

1. Determine sleeping arrangements.
2. If people will sleep on the floor, provide some floor covering (rugs, plastic, cardboard).

J. TRAINING, RECREATION, ETC.

1. Provide supplies for training; paper, pencils, blackboard, if possible; training texts (first aid, radiological monitoring).
2. Supply recreational materials (cards, books).

K. MAINTAINING A SHELTER CAPABILITY

1. Regularly check equipment and supplies. Replace or rotate as needed.
2. Read this guide. Fill in required information and update regularly.

FORMAT RECOMMENDATIONS FOR SHELTER MANAGEMENT GUIDANCE

THE RESEARCH PROBLEM

Most of the research conducted by AIR and other OCD contractors on the subject of shelter management guidance has centered on the content of the guidance materials. This is quite natural because content is the primary consideration in the preparation of instructional materials. Content, however, is not the only important factor. The format in which the materials are presented can significantly affect the degree to which the guidance is used and its effectiveness in use.

To the extent that format has been a subject of previous shelter management guidance research, it seems to have been in the context of the logistics of guidance materials. "How do we ensure that everyone who needs information gets it?", seems to have been the basic question asked. These efforts dealt with cards, envelopes, tear sheets, placards, etc.,-- ways of getting guidance to its users. The problem posed here is, in a sense, the next step in the process. How do you arrange information on the printed page so that once the ultimate user receives it, he will use it most effectively under the physical and psychological conditions that will obtain in an occupied fallout shelter?

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THE APPROACH

This report is based on a study of the available literature on the preparation of written guidance materials. As one can observe from scanning the list of references, there has been very little work done on the specific subject of written materials for emergency use.

Emergency-use written guidance differs from "normal" guidance materials in several important ways. The primary difference has to do with time, which in an emergency is a very precious commodity. Therefore, emergency guidelines must be located, read and understood rapidly. The emotional and environmental conditions under which assistance will be sought from written materials in an emergency also poses problems for the optimum preparation for emergency handbooks. For example, poor lighting, over-crowding, and emotional upsets can greatly influence the rate and accuracy of guidance use.

The section that follows contains a compilation of recommendations that appear relevant to formatting guidance materials for in-shelter use. Where the recommendations are based on research, the appropriate studies will be referenced. Where recommendations are based on standard practices or best estimates, this will be noted.

SHELTER MANAGEMENT GUIDANCE FORMAT RECOMMENDATIONS

Type Style: (Tinker, 1963)

Type styles in common use are equally legible. Readers prefer a type face that borders on bold face such as Antique or Cheltenham.

Readers show definite preference against italics. Therefore, they should not be used.

For standard written materials, all capitals retards the speed of reading in comparison with lower case. Capitals are judged less legible. Capitals take up 1/3 more space. The use of all capitals should be discouraged in every situation.

Bold face printing should be used for emphasis but should not be used for long passages of text as readers' preferences are against it.

Leading, Type Size, and Line Width: (Baker & Grether, 1954)

Type size: The use of ten or eleven point type is generally recommended. However, nine or twelve point type is very satisfactory. (One point = .0138 inches).

Line length: The optimal line length is about 19 picas (3.154 inches). Avoid line lengths less than 14 or more than 28 picas. Long line lengths can be avoided by using two or more columns to a page. (One pica = .166 inches).

Leading: Leading refers to the distance between lines. With ten or eleven point type the lines should have not less than two point leading.

A relationship exists between leading, type size and line width. (Tinker, 1963). A "Safety Zone" of limits has been determined for this relationship. This "Safety Zone" is the limits in variation in line width and leading that may be used for a given type size without appreciable loss of legibility. They are listed in Figure 1.

11

9 Point

14-pica line with 1 to 4-point leading

18-pica line with 1 to 4-point leading

30-pica line with 1 to 4-point leading

10 Point

14-pica line with 1 to 4-point leading

19-pica line with 2 to 4-point leading

31-pica line with 2-point leading (marginal)

11 Point

16-pica line with 1 to 2-point leading

25-pica line with or without leading

34-pica line with 1 to 2-point leading

12 Point

17-pica line with 1 to 4-point leading

25-pica line with or without leading

33-pica line with 1 to 4-point leading

Figure 1. Safety Limits for Common Size Type

Spatial Arrangement of the Page: (Tinker, 1963)

Margins: The margins at the top, outer, and bottom edges of the page should not be less than 1/2 inch. Larger margins are no assistance to legibility and waste space. However, the inner margin should be large enough so that printed material does not become hidden in the contours of the page entering the binding.

Indenting: As indenting the first line of each paragraph improves the legibility by over 7%, this practice should be followed.

Area: Printed matter normally occupies about 50% of the total page size, although readers report that from 60 to 75% is filled. This practice, should be continued (so the page doesn't appear crowded).

Space between columns: If two or more columns of print appear on one page, the distance between the columns should be at least one pica. There should be no ruled lines between columns.

Use of Tabs for Quick Access to Information: (Rees & Kama, 1959)

A 38% increase in performance efficiency with the use of tabs at the left hand side of the page, under certain conditions has been reported. The following recommendations are based on this study.

Minimum tab size should be 3/4" x 3/4".

Tab indentification ("Index Directory") should be horizontal along the right hand margin of the cover, and referenced to the tab by position and letter code.

Letter code on tab should be vertical.

Type size on tabs should be 14-point type or larger.

Use of Tables, Graphs, and Scales: (Rees, 1959)

Tables should be reduced to the simplest form consistent with the degree of sensitivity required to permit reading without necessitating interpolation on the part of the reader.

Tables are preferred over graphs and scales for reading numerical data. However, if the general shape of the function is important in making decisions, a graph is superior. Also, if interpolation is necessary for any method selected, the graphic or scalar methods are superior to the tabular method. Graphs and scales are about equally good for reading numerical values.

The graphs should be constructed so that the numbered lines are bolder than the unnumbered lines. If ten line intervals are used between numbered lines, the fifth intermediate line should be less bold than the numbered lines but bolder than the unnumbered lines.

Decals, Checklists, and Lables: (Baker & Grether, 1954)

Visibility of instruction decals, checklists, and lables becomes a critical consideration when the manager is pressed for time in emergencies and when under these circumstances he must operate infrequently used equipment. The recommendations that follow apply to instruction lists attached to the equipment or display panel, as well as checklists.

Style of print: (Rees, 1959). For viewing at a distance, (e.g., wall placards) capital letters should be used in preference to lower case because capital letters are readable at greater distances. The AND 10400 letters or any similar commercial forms such as Futura, Airport Semi Bold, or Demi Bold are satisfactory. The stroke-width-to-height ratio should be from 1/6 to 1/8.

Size of print: (Rees, 1959). The recommended letter size depends upon the reading distance and illumination conditions. Assuming a reading distance of 28 inches or less and a wide range of illumination conditions (including illuminances below one foot candle), the letter height should be at least .20 inches. For less critical functions or when the illumination is always above one foot candle the letter height may be reduced to .10 inches.

Contrast: (Rees, 1959). Where dark adaptation is required the letters should be white on a dark background. This contrast relationship reduces the amount of light entering the eye. At stations where dark adaptation is not essential the print should be black on a highly reflective white matte background.

Word selection: Words and sentences are more immediately recognized as a function of the degree of familiarity the reader has with the words read. (Howes and Solomon, 1951). Therefore, decals, checklists, and labels should be composed of words that are relatively common to the reader. However, you should use the common words in preference to very infrequent words only if the common words will say exactly what you intend to say. The best estimate of general population word familiarity is based on the Thorndike and Lorge 1944 word count. For particular populations, common technical terms may be used even though these words may occur infrequently for other populations.

Brevity: Emergency instructions and checklists should be made as concise as possible without distorting the intended information. This saves reading time and panel space.

Page Size and Color: (Tinker, 1963)

American non-scientific magazine page sizes are concentrated in the 6 by 9 inch and 6 by 10 inch page sizes. These sizes should be considered in preference to others.

The suggested paper-print combination is black print on white reflective matte paper.

If finished paper is used, when type size is 10 point or more, and the reflectance is 70% or more, there is no appreciable loss of legibility.

For colored (tinted) paper, use dark ink on light color to increase contrast between print and paper. Avoid dark ink on dark paper.

Table I is the rank order of combination of page color and type based on eye movement records (fixation frequency, pause duration, and perception time).

While main body of text should be black on white, title pages, summaries, checklists should be another color (black on yellow, brown, etc.). The particular color would be determined based on the above contrast requirements and availability of paper stocks, etc.

Format for Check Lists

Checklists should be on one page whenever possible. They should be labled and enclosed in black lines.

Checklists should be in all caps, on different color pages from instruction text.

Where checklists or instructions affect the immediate safety of the shelter occupants, the page should have a distinctive red border, 1/4" thick.

For specific items which are critical in one checklist or series of instructions a warning or caution note should be added. This warning or caution should be in a separate box bounded by 1/16" black lines.

For minor emphasis on important points, they should be underlined.

TABLE I - COLOR COMBINATION RANKS

Color Combination	Mean Rank	Final Rank
Black on yellow	1.75	1 (best)
Red on white	2.00	2
Green on red	3.00	3
Black on white	3.25	4
Black on purple	5.00	5
Orange on white	6.00	6
Red on green	7.00	7

(Note: While the most legible combination is black on yellow,
the black on white is the most preferred and hence
should be used where possible).

Content

Make presentation of material simple and straight forward.

Use present tense, second person.

Use subheads to aid scanning material.

Put complete captions under illustrations.

Use a simple style of writing. Reduce to a minimum the amount of time which the reader must devote to figuring out what you are trying to say.

Choose simple words. Educated readers understand short words just as well as long words and the public understands short words much better.

Make your copy specific.

Write more copy than is necessary to fill the space. It is found that copy usually improves in quality when it is cut. Copy writers should write more copy than is needed for a given space and then boil it down.

Get help from others. It is helpful to take what you have written and show it to someone else and get his opinion.

Cover

The Shelter Manager's Guide cover will set the pattern for its use. The following is recommended based on the judgement of the writer.

Cover should be simple and as uncluttered as possible. No pictures, contract numbers, or extraneous information.

Cover should include the index directory on the right-hand column of the page.

Cover should include the title, and simple instructions for use, possibly connected to the index directory.

18

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13. ABSTRACT

This report describes two small scale research efforts dealing with the subject of management guidance materials for use in-shelter. The first effort culminated in a prototype abbreviated guidance aid designed for the small (under 50 person) shelter. This version tried to avoid some of the short-comings of previous management guidance documents, such as large size or inflexibility of use. The second section of this report is based on a review of the relatively meager literature on the preparation of written materials for emergency use. It discusses the major "graphic art" factors that should be considered in developing emergency guidance materials and provides recommendations for guidance preparation where appropriate.

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14. KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
Shelter Management						
Shelter Management Guidance						
Shelter Size (Under 50)						
Emergency Guidance Materials						